

# Danish Pork Industry – Lessons To Be Learned

Iowa State University Extension Swine and Livestock Field Specialists

(First in a series)

By Russ Euken, ISU Extension livestock field specialist

*In October 2005, Iowa State University Extension swine field specialists, Iowa Pork Industry Center staff and IPPA president Steve Kerns traveled to Denmark for a first-hand look at the country's pork industry. The group's itinerary was designed with these primary objectives: study impacts of animal welfare legislation, examine the impacts and effects of bans on antibiotic growth promotant use, and analyze the development and management of increasing sow herd productivity. During the week-long trip, members met with industry representatives, advisors and producers; visited farms, a harvesting facility and an equipment manufacturer; and spent time with the Danish Animal Welfare Society and the Danish Bacon and Meat Council.*

**T**he swine industry in Denmark is an important part of the national economy. In terms of value of annual turnover, Danish Crown Cooperative is the third largest company in the country. About 60,000 people are employed in the pork industry and pork exports represent nearly six percent of the country's total export value. Production numbers are similar to those of Iowa, on a land area about 3/5 the size of Iowa. (See Table 1.) As a country, Denmark ranks ninth in the world in the amount of pork produced.

Most of the country's pork production, harvesting and processing is done through a cooperative system that's been in place since the 1880s. As with most industries, change continues to occur. In 1970, there were 50 harvest cooperatives; now there are two: Danish Crown and Tican. Farmers own part of the cooperative and sell their pigs there as well. A national price is set on a weekly basis, which is based on prior week pork sales. Patronage refunds are received at year end.

The National Committee for Pig Production, which represents multiple segments of the industry including producers and cooperatives, conducts research on many aspects of production and processing. This is done by ranking resources in order of priorities for these main areas: breeding, nutrition, reproduction, housing, production systems, health, information and advisory services. Before implementing a new project, its value and efficacy are thoroughly discussed. For example, one current project is genetic selection to increase the number of live pigs at day five post-farrow. In general, producers work together to achieve goals for the industry.



The Iowa group visits a regional farm advisory center (Hobro-Aalborg Landboforening): (L to R) Jim McKean, Jerry Weiss, John Mabry, Colin Johnson, Dennis DeWitt, Steve Kerns, Dave Stender, Russ Euken, Larry McMullen, Terry Steinhart, Mark Storlie

The number of pork producers in Denmark has declined over the past 30 years, falling from about 80,000 in 1975 to about 10,000 in 2004. But the number of pigs produced during that same time has more than doubled: from 11.3 million in 1970 to 25.2 million in 2004. In addition, herd size has increased. The current sow herd averages about 375 sows and current finishing farms average about 4,400 pigs. There are no corporate farms in Denmark; the majority of the operations are owner operators. However, it is a much integrated system with all parts of the industry focused on specific goals, markets and quality throughout.

With more than 85 percent of its production exported, Denmark is the world's largest pork exporter. More than 130 countries import Danish pork, with the principle ones being Germany, United Kingdom, Japan and Italy, respectively. The USA also imports Danish pork, most commonly in the form of spare ribs. And while the Danes themselves consume healthy amounts of pork (approximately 122 pounds per capita in 2004), with a population

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of 5.4 million, most of their pork leaves the country. The Danish Agricultural Council estimates that Denmark represents 23 percent of the world's total pork trade.

The cost of production in Denmark is higher than in Iowa. This is due to the expense of labor, facilities and lighter slaughter weights. For the past three years, profitability there has been low. The price is highly dependent upon exchange rates and a low U.S. dollar, consequently, has weakened the value of Danish pork.

Although the past few years have not been profitable, many Danish pork producers have expanded, with much of the growth occurring in sow herds. As in the U.S., there are environmental regulations producers need to understand and implement. Some of these regulations will sound familiar to Iowa producers: separation distances, maximum nutrient rates from manure and a permitting system that depends on local control – not always a quick process. Producers we talked with commented on these regulations and how they impacted operations. There is a great deal of research on odor control and nutrient management, including separation of manure.

As their operations have expanded, producers also have had to adopt animal welfare measures enacted by the European Union (EU) and the Danish Parliament. The cooperative slaughterhouse companies also have their own Codes of Practice to ensure producers meet certain standards for domestic and export markets.

The welfare legislation began in 1991 with a general statement about animal care and housing. In 1998, EU requirements were adopted that pertain to loose housing of sows for gestation, bedding requirements and space requirements for facilities that would be built after 1999.

What does all this mean for producers? By 2013, all farms within the EU will be required to have loose housing for gestating sows (newer EU member countries will have a phase-in period). Crates may be used for up to four weeks after mating and for farrowing. Farms must be visited by a veterinarian every 35 days to ensure welfare standards are followed. Five percent of farms are audited by the government annually for adherence to the welfare legislation. There also are fairly specific measures for transporting market hogs.

Producers are adapting to these requirements and are building new facilities with loose housing. More than 60 percent of sows now are maintained in loose housing systems in several styles of facilities.



Steve Kerns, Colin Johnson and Russ Euken check productivity in a Danish farrowing facility.

Producers are focused on efficiency and productivity. Most have an efficiency report completed for them through an advisory service that's part of their farmers union. Some farms are achieving or getting very close to 30 pigs weaned per sow per year. The average litter size in live born pigs is 12.9. This high level of productivity is the result of several factors, in our observation. Genetics, gilt development strategies and breeding management all may play roles in achieving 30 p/s/y. Look for more information in future articles.

In addition to animal welfare legislation, the Danes have adopted a voluntary ban in their pork production system on growth-promoting antibiotics. The ban on use in finishers was put in place in 1998. Prior to then, producers faced a tax system for using antimicrobial growth promoting antibiotics, so most producers didn't use them. Consequently, the finisher ban had little effect.

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In 2000, the ban was expanded to nursery pigs, and this was a different story. Pigs grew more slowly and had more disease problems. The use of therapeutic drugs increased greatly. To address these issues, producers made some management changes. Later weaning to achieve heavier pig weights and a variety of diet additions to achieve “pre-antibiotic ban” production levels in the nursery have met with varying levels of success. Even so, producers don’t consider the ban and the resulting changes to have been major barriers in their respective abilities to be successful. Veterinarians are required to visit farms each month to document antibiotic usage. More information on antibiotic usage and producer adaptations will be provided in a future article.

Our group had the opportunity to tour the new harvest facility at Horsens that has implemented a high level of automation in its processing line. Many of the country’s harvest facilities have live animal handling systems that efficiently move groups of 15 pigs with very little human effort and little resistance from the animals themselves. This plant and others use group stunning via CO<sub>2</sub>.

The producers and industry representatives we met were very positive about their industry and expect it to continue to grow. However, they also recognize that there are environmental limits on how much growth can be achieved. With the focus on

**Table 1. Pork Production in Iowa and Denmark**

	Iowa	Denmark
Pig inventory (million)	16.1	13.3
Sows	1.1	1.4
Pigs	15.0	11.9
Pig crop (million)	15.3	26.2
Live imports (million)	16.3	0
Live exports (million)	0	2.3
Annual production (million)	29.6	25.2
Annual slaughter (million)	29.8	22.9
Harvest weight (lbs)	268	227
Human population (million)	2.9	5.4
Area (sq. miles)	56,240	16,629
Total arable farmland (million acres)	26.8	5.7
Pig density ( per acre) ( per sq. mile)	0.56 358	2.30 1468

quality and their foothold in the export market, their industry would appear to be able to grow if allowed from an environmental standpoint. Some Danish producers have started to export live pigs to Germany for finishing and are looking at other countries in which to invest and expand.



A litter of 14 in a Danish farrowing facility.

Future articles in this series will include information from other ISU field specialists on welfare, antibiotic use and producer adaptation, and sow herd productivity and throughput in Danish pork production.

Contact any Iowa State University Extension swine or livestock field specialist or the Iowa Pork Industry Center for more information. If a group would like a presentation on the Danish pork industry or any of the specific issues of productivity, antibiotic growth promotants or animal welfare, contact the field specialists or the Iowa Pork Industry Center.

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Pull Pit Buildings	556.0 ppb	163.7 ppb	71%